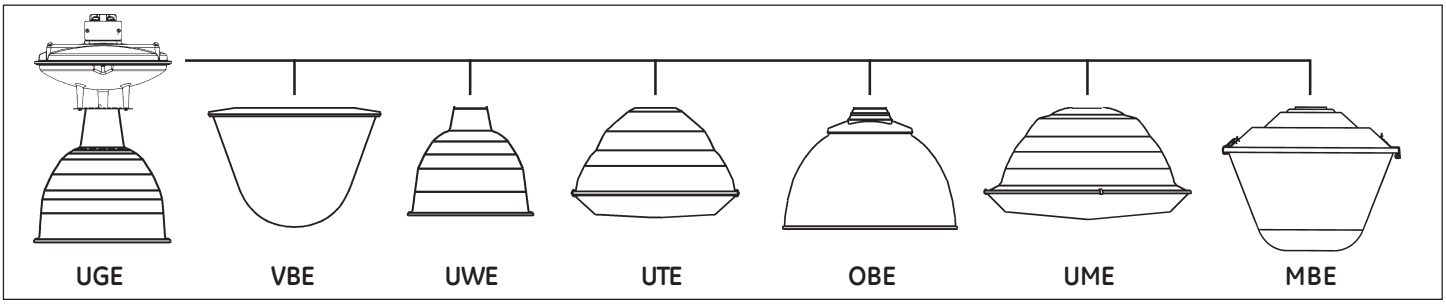
GE
Lighting Solutions

GEH-5958E

INSTRUCTIONS

NUVATION™ Electronically Ballasted
Industrial Luminaires, Installation and Maintenance



READ THOROUGHLY BEFORE INSTALLING
SAVE THESE INSTRUCTIONS FOR FUTURE USE

WARNING

Risk of electric shock
- Turn power off before servicing

CAUTION

Risk of injury
- Wear safety glasses and gloves during installation and servicing

CAUTION

Risk of burn
- Do not touch operating luminaire

GENERAL

This luminaire is designed for indoor applications only, and should be installed and maintained according to these instructions.
The NuVation™ ballast is designed to operate 250W,300W, 320W, 350W and 400W pulse start and ceramic metal halide lamps with line voltages from 208-277 volts.
See nameplate for more information.

Any part damaged or broken during or after assembly or installation should be replaced.

NOTE: The maximum fixture ambient temperature rating is the LESSER of the ratings indicated on the ballast and optical assemblies.

NOTICE: There are no user serviceable parts inside this ballast housing and there should not be a need to access the inside of the ballast housing.

Minimum clearance of 3 feet must be maintained below luminaire.

If the luminaire you ordered has a polycarbonate/acrylic refractor, please pay particular attention to the following statement:

All -articles made from polycarbonates/acrylics, including polycarbonate/acrylic resin, will yellow with time. The rate of yellowing is determined by the specific material, any additives and coatings, as well as the optical temperature and exposure to Ultraviolet (UV) light.

This yellowing can reduce the light output and impact resistance of products made from polycarbonate/acrylic resin. In no case should the maximum lamp age, wattage rating, or ambient rating listed for the luminaire be exceeded. Contact factory for more information.

UNPACKING

This luminaire has been properly packed to avoid damage during transit. Inspect the luminaire to confirm there is no damage. Do not install a damaged luminaire or damaged luminaire components.

NOTE: The NuVation luminaire is supplied with a Slide-On Through Wire Box which may be included in the carton ready to install.

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to GE Lighting Solutions.

INSTALLATION

WARNING

Risk of fire
- Keep combustible materials away from lens
- Use lamps specified on the "luminaire fitting" nameplate
- Maintain a minimum of 3 feet clearance below the luminaire

CAUTION

Unit will fall if not installed properly
- Follow installation instructions
- Attach ONLY by threaded Boss
- Do not use Knockout Holes for mounting.

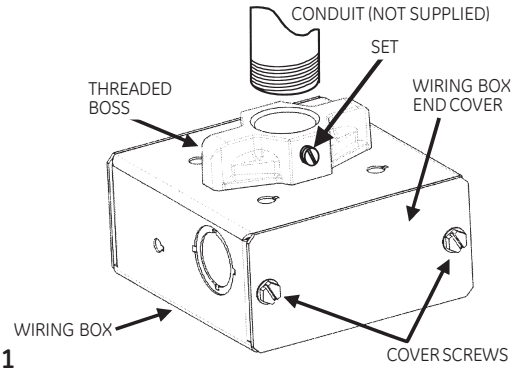


Figure 1

CONDUIT MOUNTING

1. Remove the Wire Box End Cover by removing the two (2) screws as shown in Figure 1.

1.A. For NuVation™ with Dimming Option, remove both wiring box doors (Figure 2) for electrical connections and box removal.

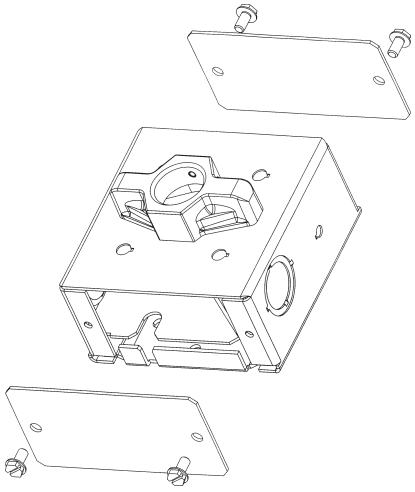


Figure 2

2. Thread the Wiring Box onto the conduit. Secure the conduit with the set screw provided. Ensure that the Wire Box cannot turn on the conduit once Set Screw has been tightened.
3. Slide the Wiring Box onto the Mounting Bracket, which is pre-assembled on to the Upper Housing as shown in Figure 3.

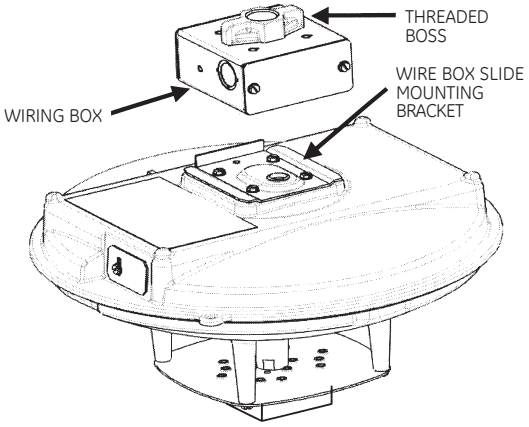


Figure 3

NOTE: The Ballast Housing is not fully secure until the wire box End Covers are reattached!

4. Connect the supply wires from mains to the Black and White supply leads. Connect the Green Earth Ground Lead. Adhere to the requirements defined the **WIRING** section below.
5. Replace the Wire Box End Covers. Insert and securely retighten the End Cover Screws as shown in Figure 2.

The Ballast Housing is now secure.

FLEXIBLE MOUNTING

If flexible mounting accessories (hook or loop) are supplied separately, thread the shaft into hanger hub/locking nut assembly and follow the instructions above for conduit mounting.

CAUTION: If this instruction is not followed damage to the mounting parts can occur causing the fixture to fall. When using hook or loop fixture mounting, do not apply luminaire weight when the mating parts are as shown in Figure 4. Do not apply any twisting action to the hook and loop assembly. When properly installed the hook and loop assembly is as shown in Figure 5.

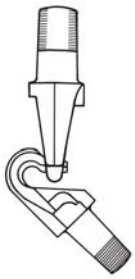


Figure 4

Figure 5

WET LOCATION OPTION

When installing in a wet location, it is important to properly install the Conduit with an appropriate water sealing material. The GE Lighting Systems wet location wiring box and a GE Lighting Systems wet location optical must be used.

WIRING

Make all electrical connections in accordance with the -National Electrical Code and any applicable local code requirements. Verify that the supply voltage is correct by comparing it to the ballast's "luminaire fitting" nameplate.

The Luminaire wattage is preset at the factory. Please contact the factory for instructions and a retrofit kit if a different wattage is required.

CAUTION

Risk of Electrical Damage
- DO NOT MISMATCH wattage setting and Metal Halide HID Lamp wattage.
- Verify that the circuit wiring and circuit breakers are rated for the total circuit load.

The NuVation ballast is rated for use with a supply voltage between 208V and 277V with +/- 10% line voltage tolerance, 50/60 Hz, and will automatically sense voltage within the specified range.

The wire colors for the input lines in the wiring box are:

Black Color = Primary Phase White Color = Neutral or Secondary Phase	All Nuvation Models	Dimming Nuvation
Green Color = Fixture - Earth Ground		
Violet Color = (+) 0-10VDC Dimming		
Gray Color = (-) 0VDC Dimming		

DIMMING FEATURE / INSTRUCTIONS

The NuVation™ meets the lamp manufacturers requirements of starting/operating the lamp at high wattage for at least 15 minutes before any dimming control can happen.

For continuous operation (24 hr/day) the NuVation will automatically go into a full power mode once a day for at least 15 minutes as required by lamp specifications.

WIRING NOTES: Polarity of the dimming control leads (VIOLET + and GRAY -) must be maintained.

DIMMING CONTROL

Dimming control is accomplished by connection to the VIOLET + AND GRAY –
Wires in the wiring box (Figure 2). See Diagram A for wiring schematic.

POLARITY MUST BE PROPERLY APPLIED
(VIOLET + To control +) AND (GRAY – To control -)

Shorting (example with a switch) the violet and gray wires will cause the NuVation to operate at low wattage, removing the short will cause the lamp to operate at full wattage.

External control systems can be used to operate the bi-level function.

DC Control Voltage	0V	+5V	+10V
Output Level	50%	75%	100%

A zero (0) to ten (10) volt DC power supply can control the bi-level operation.

This can be either to continuously adjustment lamp wattage 50% to 100 %.
Or one step 50% to 100%.

POLARITY MUST BE PROPERLY APPLIED
(VIOLET + To control +) AND (GRAY – To control -)

A resistor or potentiometer (pot) can also be used to continuously adjust lamp wattage by connecting to the VIOLET + and GRAY – wires. The resistor or potentiometer should be in the 0 – 50K ohm range. The voltage output from the VIOLET + and GRAY – wires will be in the 0-10 volt range and current will be less than one (1) milliamp.

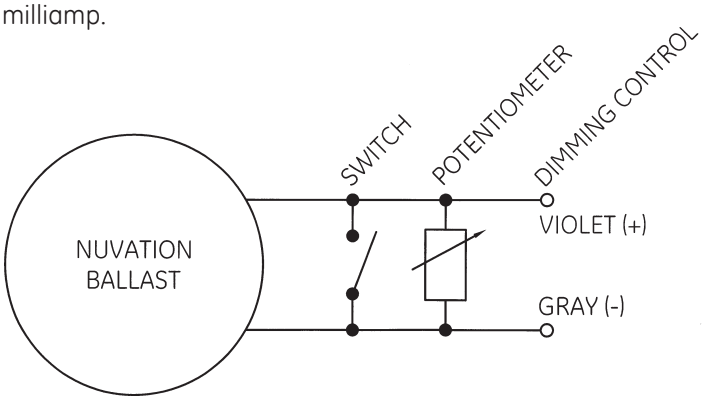


Diagram A

Added Features of the GELS NUVATION ™
- Automatic lamp shut off if the lamp fails to start within 90 minutes
- After a power shut off the NUVATION must be switched off and then back on (cycle time 1 to 2 seconds).

Automatic lamp shut off for end of life high voltage lamps

FINAL ASSEMBLY

OPTICAL ASSEMBLY/MOUNTING
UGE, VBE, UWE, UTE, OBE, UME, MBE

1. Secure the reflector to the bottom of the ballast housing as shown in Figure 6. Installation is aided by keyhole slots in reflector.

1a. On **VBE** and **MBE** units with Safety Chains, orient the reflector so that the Ballast Housing and Reflector Safety Chain Attachment Holes are on the same side.

1b. On **VBE** units push the Reflector Mounting Bracket thru the reflector opening and slide it over the Socket Brackets all the way. On 400 watt Metal Halide units the top (first) hole of the Mounting Bracket will snap over the Socket Bracket screws. On all others, the bottom (second) hole will snap over the bracket screws. See Figure 7. For additional assembly instructions, refer to the instruction sheet that came in the small box with the metal reflector and -mounting bracket.

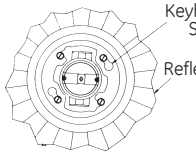


Figure 6

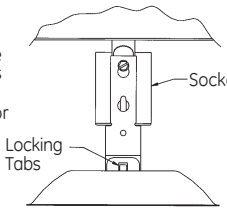


Figure 7

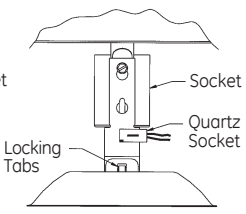


Figure 8

NOTE: If VBE unit has a SAFETY LIGHT option, clip the quartz lamp socket over the socket bracket leg and reflector bracket leg in a horizontal position as shown in Figure 8.

2. Refer to **LAMP INSTALLATION** and screw the lamp into the socket.
3. For enclosed units, close the door and secure it properly in place by latching the first latch opposite the hinge, followed by the other latches.

SAFETY CHAINS

CAUTION

Unit will fall if Safety Chain is not installed properly

- Safety chains must be installed as described below.

CAUTION: When used, safety chains must be carefully installed as outlined below.

Safety chains and attachment accessories are available from the factor as an optional accessory for both ballast and optical assemblies. Safety chains should be attached with minimum slack. Luminaire safety chains must be installed in a manner that prevents the luminaire from falling more than six (6) inches before it is caught by chain.
To install ballast safety chain, insert the "S" hooks though the hole in the ballast housing and crimp shut.
To install an optical safety chain, insert the "S" hook through a link in ballast safety chain and crimp shut. Use the snap hook to attach to the clip or hole on the optical as shown in Figure 9.

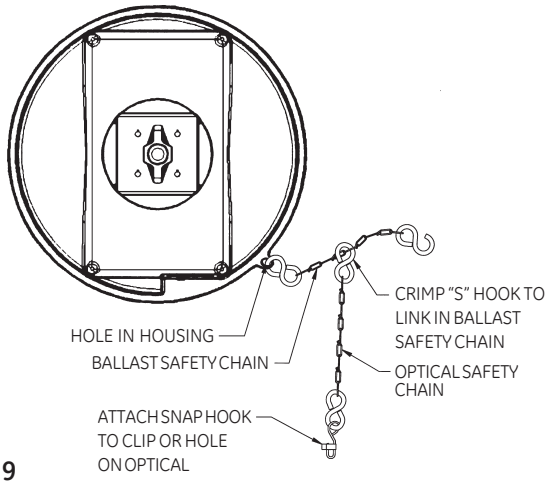

HOLE IN HOUSING
BALLAST SAFETY CHAIN
ATTACH SNAP HOOK TO CLIP OR HOLE ON OPTICAL
CRIMP "S" HOOK TO LINK IN BALLAST SAFETY CHAIN
OPTICAL SAFETY CHAIN

Figure 9

LAMP INSTALLATION/REPLACEMENT

CAUTION

Risk of burn

- Allow lamp/fixture to cool before handling

LAMPS

The light output of a luminaire is dependent on the age of lamp. In applications where light level is critical it may be desirable to replace lamps before they burn out. Lamp manufacturer's can provide data showing how lamp light output decreases with use and recommended replacement intervals.

CAUTION: Use only lamps specified on nameplate. Observe lamp manufacturer's recommendations and restrictions on lamp operation, ballast type, burning position, handling, and disposal.

LAMP TIGHTNESS – MOGUL BASE

The lamp should be tightened to the **NEMA-EEI** specified torque of 35 inch-pounds. Tightening must be sufficient to fully depress and load center contact of socket. This is best achieved by very firmly tightening to insure application of sufficient torque.

Auxiliary Quartz Lamp: if the unit has this option, inset the quartz lamp in its socket making sure to wipe any fingerprints off lamp following the quartz lamp instructions.

NOTE: Use of lubricants on lamp bases or sockets can cause rapid lamp failure and voids your fixture warranty

The Auxiliary Quartz Lamp (if used) must be rated for 120V and from 100 to 250 Watts.
When power is applied, the Auxiliary Quartz Lamp, (if used) will immediately turn on. As the HID Lamp strikes and warms up, the Auxiliary Quartz Lamp will automatically shut down.
During normal HID Lamp operation, if the power is interrupted, the HID Lamp will extinguish and the Auxiliary Quartz lamp will turn on, until the HID Lamp restarts. After the HID Lamp restarts, the Auxiliary Quartz Lamp will automatically shut down.
Should the HID Lamp fail to start, the Auxiliary Quartz Lamp will provide back up lighting. If the HID Lamp completely fails to start, replace the HID Lamp.

MAINTENANCE AND CLEANING

1. There are no user serviceable parts within the ballast housing.
2. The ballast will automatically shut down if the lamp voltage is too high. This is to reduce the chance of a Non Passive Failure of the lamp. The ballast will restart when the power to the unit is turned off and then back on.
3. The ballast will automatically shut down if the HID lamp will not start within a 90 minute time period. The ballast will restart when the power to the unit is turned off and then back on.

It will occasionally be necessary to clean outside of refractor to maintain light level. Frequency of cleaning will depend on ambient dirt level and minimum light level which is acceptable to user. Lens Door (if enclosed) should be washed in a solution of warm water and any mild, nonabrasive household detergent, rinsed with clean water and wiped dry. Should optical assembly become dirty on inside, wipe Reflector and clean Lens Door in above manner, and replace any damaged gaskets.

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35-201578-150 (8/07)